IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of	Group Art Unit: 2612
Quan Vu *et al.*	Examiner: Misleh, Justin P.
Serial No. 09/249,642	
Filed: February 12, 1999	**REPLY BRIEF IN RESPONSE TO EXAMINER'S ANSWER**
For: **METHOD OF AND APPARATUS FOR GENERATING A PRECISE FRAME RATE IN DIGITAL VIDEO TRANSMISSION FROM A COMPUTER SYSTEM TO A DIGITAL VIDEO DEVICE**	162 N. Wolfe Rd. Sunnyvale, CA 94086 (408) 530-9700
	Customer No. 28960

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Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

In reply to the Examiner's Answer mailed on June 29, 2007, this Reply Brief is hereby submitted. Claims 1, 2, 4-8 and 10-32 have been rejected. The appellant submits this brief to the Board of Patent Appeals and Interferences in compliance with the requirements of 37 C.F.R. § 41.41, as stated in *Rules of Practice Before the Board of Patent Appeals and Interferences (Final Rule)*, 69 Fed. Reg. 49959 (August 12, 2004).

The appellant contends that the rejection of Claims 1, 2, 4-8 and 10-32 in this pending application is in error and should be overcome by this appeal. The appellant further contends that the Staats reference, used as a basis of the rejections of the pending claims, has been mischaracterized, misinterpreted and misapplied in order to attempt to support the rejection of Claims 1, 2, 4-8 and 10-32.

I. SUMMARY OF THE CLAIMED INVENTION

The claimed invention is directed to a method of and apparatus for transmitting an isochronous video stream of data at a particular frame rate from a source device to a receiving device. The receiving device determines the particular, desired frame rate. [Present Specification, page 4, lines 1-2] The source device preferably determines a proper ratio of data packets versus video frames in response to the particular frame rate required and a cycle time for isochronous data. [Present Specification, page 4, lines 2-4] This proper ratio of data packets versus video frames rarely computes to an integer result. [Present Specification, page 4, lines 4-5] Accordingly, once the proper ratio of data packets versus video frames is determined, the source device preferably generates two groups of frames. [Present Specification, page 4, lines 5-6] A first group contains an integer value of packets nearest to and above the desired overall average ratio of data packets versus video frames. [Present Specification, page 4, lines 6-8] The source device also generates a second group of frames where each frame from this second group contains an integer value of packets nearest to and below the ratio of packets versus video frames. [Present Specification, page 4, lines 8-10] In order to achieve the desired frame rate, the source device generates a frame ratio containing a specific number of frames from the first group and the second group and forms the isochronous stream of video data. [Present Specification, page 4, lines 10-12] Accordingly, the frames from the first group and the frames from the second group are of a same type and have the same characteristics.

Within the present application, an equation (1) is taught to calculate the number of packets necessary per frame to achieve the required frame rate:

$$\frac{1}{frame\ rate} * \frac{1}{cycle\ time} = \frac{No.\ of\ packets}{frame} \qquad \text{Equation (1)}$$

[Present Specification, page 9, lines 5-9] For a required frame rate of 29.9700 frames per second and a cycle time of 125 microseconds per cycle, the resulting number of packets per frame is equal to 266.9336 packets per frame. [Present Specification, page 9, lines 11-13] A data stream is then formed from a ratio of frames containing different whole numbers of packets. [Present Specification, page 9, lines 14-18] In order to achieve the overall average of 266.9336 packets per frame over the course of 10,000 frames, 9336 frames are generated containing 267 packets and 664 frames are generated containing 266 packets, yielding a ratio of fourteen frames containing 267 packets to every one frame containing 266 packets. [Present Specification, page 9, lines 18-22] As taught within the present specification, the originating device generates

fourteen frames containing 267 packets followed by one frame containing 266 packets. [Present Specification, page 9, line 24 - page 10, line 2] This pattern is then repeated in order to generate and transmit the data stream. [Present Specification, page 10, lines 2-11] The pattern of fourteen frames from the first group of frames (267 packets) interrupted by one frame from the second group of frames (266 packets) continues as long as the data stream is being transmitted. [Present Specification, page 10, lines 12-22, Figure 6] The calculation of the ratio of frames with 267 packets and frames with 266 packets is only performed once and then the repeating pattern is continued as long as the data stream is being transmitted. This repeating pattern evenly distributes the frames from the second group of frames among the frames from the first group of frames.

Each of the claims being appealed includes a limitation specifying that a ratio is calculated. As will be discussed in detail below, Staats does not teach ***calculating*** a ratio of first data blocks and second data blocks. Each of the claims being appealed also includes a limitation specifying that a repeating pattern is formed and that the first data blocks are evenly distributed among the second data blocks. As will be discussed in detail below, Staats does not teach forming a repeating pattern and evenly distributing the first data blocks among the second data blocks.

II. SUMMARY OF TEACHINGS OF STAATS

Staats teaches a method for setting a time stamp in the SYT field of packet headers for IEEE-1394 devices. [Staats, Title] Staats teaches stamping isochronous data packets with a presentation time stamp value determined according to a computed packet rate for the data. [Staats, col. 2, lines 45-48] Staats teaches that a computed packet rate for the data can be a non-integer value. [Staats, col. 5, lines 64-65, col. 6, lines 7-8] To achieve this non-integer value, Staats teaches using a data stream command language. [Staats, col. 6, lines 14-16] The data stream command language is a set of commands that control data flow into or out of a data stream. [Staats, col. 6, lines 16-20] Staats teaches that the data stream command language jump commands are used to allow a transmitter to send a frame with a different number of packets. [Staats, col. 6, lines 27-32]

Staats teaches that sometimes the transmitter will need to send 266 packets/frame and sometimes 267 packets/frame. [Staats, col. 6, lines 7-16] Staats teaches that the system determines when the driver should be notified to vary the default number of packets per frame, on a frame by frame basis. [Staats, col. 8, lines 21-67] Specifically, Staats teaches calculating a delta value for each frame, such that if the delta value is equal to or greater than one, a frame

with 267 packets is transmitted and if the delta value is less than one, a frame with 266 packets is transmitted. [Staats, col. 8, lines 54-61]

III. STAATS IS BEING MISCHARACTERIZED, MISINTERPRETED AND MISAPPLIED IN ORDER TO ATTEMPT TO SUPPORT THE REJECTIONS

Extraordinary measures have been taken to support the rejections of the claims on appeal based on Staats. A typical rejection does not require a series of calculations to be performed in order to attempt to support the rejection. If the actual teachings of Staats supported the current rejections, then no calculations or other extraordinary demonstrations would be necessary.

To support the rejections based on Staats, calculations of the data packets per frame values M for a hypothetical data stream have been performed. [*See* Examiner's Answer, pages 5 and 6] These calculations are then used to support the position that Staats teaches a repeating pattern and calculating a ratio of first data blocks to second data blocks. However, upon close review of these calculations, it is apparent that not only do these calculations go well beyond the actual teachings of Staats, the calculations do not follow and even misapply the actual teachings in Staats.

Staats does not specifically teach if the data packets per frame value M should be started at 266 or 267 packets per frame at the beginning of a transmission. However, in both examples within Staats included within Table I and Table II, the data packets per frame value M was started at 266 packets per frame for the first frame. [Staats, columns 9-10] Within, the Examiner's Answer, the data packets per frame value M was started at 267 packets per frame for the first frame within the hypothetical data stream, without explanation, even though this is in contrast to the procedure used within the actual examples in Staats. [Examiner's Answer, page 5]

Staats teaches calculating a delta value to determine when the data packets per frame value M should be 266 or 267. [Staats, col. 8, lines 54-61] Staats clearly teaches that if the delta value is greater than or equal to one, then the data packets per frame value M should be 267 and if the delta value is less than one, then the data packets per frame value M should be 266. [Staats, col. 8, lines 54-61] However, within the hypothetical calculations included within the Examiner's Answer, the data packets per frame value M of 267 is used when the delta value is less than one and the data packets per frame value M of 266 is used when the delta value is greater than one. [Examiner's Answer, pages 5-6] This is clearly in direct contradiction to the actual teachings of Staats.

Staats also teaches calculating the delta by taking the difference between the current SYT value and the corresponding cycle # for the frame minus a. [Staats, col. 9, lines 55-58] However,

within the hypothetical calculations included within the Examiner's Answer, the delta is calculated by taking a and subtracting the difference between the current SYT value and the corresponding cycle # for the frame. [Examiner's Answer, pages 5-6] Again, this is in direct conflict with the actual teachings of Staats. **The calculations would not have yielded the same values had the teachings of Staats been applied properly.** Instead, the teachings of Staats have been misapplied to generate these calculations in order to support the rejection of the appealed claims based on Staats.

Regardless of the misapplication of the teachings of Staats, the fact that a list of calculations is included within the Examiner's Answer, actually highlights the difference between Staats and the presently claimed invention. Staats requires such a list of calculations to determine on a frame by frame basis how many data packets are to be included within each frame. In contrast, the present invention requires a single calculation of a ratio that is then used to form a repeating pattern of frames with an even distribution.

A. STAATS DOES NOT TEACH CALCULATING A RATIO

Staats does not teach calculating a ratio of first data blocks to second data blocks. Staats teaches calculating an SYT value for a current frame and then calculating the delta value for the current frame, on a frame by frame basis. Furthermore, Staats specifically teaches jump commands. The jump commands are utilized in conjunction with the delta value. When 267 packets are to be transmitted, the jump command does not skip any packets; however, when only 266 packets are transmitted, the jump command causes the driver to jump over the 267th packet so that only 266 packets are transmitted. [Staats, column 8, lines 27-60] Thus, Staats teaches jump commands with delta values to determine how many packets are transmitted and not a ratio as claimed in the present application.

Within the Examiner's Answer, based on the calculations of the hypothetical data stream it is argued that Staats ***produces*** a ratio, in order to support the rejection based on Staats. [Examiner's Answer, page 11, emphasis added] This statement actually emphasizes the differences between the teachings of Staats and the presently claimed invention. Staats, might ***produce*** a ratio when the data stream is analyzed after the fact, but the produced ratio is based on a frame by frame calculation of a delta value to determine the proper number of packets per frame that should be transmitted. [Staats, col. 8, lines 54-61] In contrast, the present invention ***calculates*** a ratio of first frames and second frames in response to the particular frame rate. [Present Specification, page 4, lines 2-6] Within the present invention, once this ratio is calculated, there is not a need for any further calculations.

B. STAATS DOES NOT TEACH FORMING A REPEATING PATTERN

Staats does not teach evenly distributing x number of first data blocks among y number of second data blocks thereby forming a repeating pattern of the first data blocks and the second data blocks within the data stream. In contrast, as described above, in the present application it is taught that after every fourteen frames from a first group of frames (A), one frame from a second group of frames (B) is inserted. [Present Specification, page 10, lines 12-22, Figure 6] It is further taught in the present application that this repeating pattern of fourteen frames from the first group of frames (A) interrupted by one frame from the second group of frames (B), continues as long as the data stream is transmitted. This is an evenly distributed, repeating pattern of frames. Such an evenly distributed, repeating pattern of frames is not taught by Staats.

A position has been taken within the Examiner's Answer that Staats teaches that over a period of time, the sequence of data blocks will eventually repeat itself. No where is this taught, hinted at or suggested in the actual teachings of Staats. As discussed above, Staats teaches calculating the delta value for each frame and making a determination based on the delta value as to whether a frame with 267 packets or a frame with 266 packets should be transmitted. Based on this scheme taught by Staats, one cannot **assume** that a pattern will eventually repeat over time, no matter how long the time period. In fact, Staats goes further and even describes what happens when a cycle is missed. This repeating sequence argument, made within the Examiner's Answer, does not take such events into account and thus fails when the actual teachings of Staats are analyzed. The calculation of the hypothetical data stream as listed within the Examiner's Answer, is used to support the rejection based on Staats. However, as discussed above, this calculation of the hypothetical data stream fails in its support of the rejection based on Staats, because it misapplies the actual teachings of Staats.

Further, as shown even in the example taught by Staats in Table I, the frames are not evenly distributed. [Staats, col. 9] As described above, in the example taught by Staats in Table I, there are three frames with 266 packets, followed by one frame of 267 packets, followed by a single frame with 266 packets and a single frame with 267 packets. [Staats, col. 9] Thus, the frames of 267 packets are not evenly distributed among the frames of 266 packets. Based on the teachings of Staats, one simply does not know how many data packets should be included within the next frame until the delta value for that frame is calculated. This is very different than calculating a ratio and forming a repeating pattern of evenly distributed first data blocks among second data blocks, as claimed within the presently pending claims.

IV. CONCLUSION

Each of the claims pending within this appeal include limitations specifying that a ratio is calculated and that a repeating pattern of evenly distributed first data blocks and second data blocks is formed. There is nothing in the teachings of Staats that supports the rejections of claims with such limitations. Staats does not teach calculating a ratio. As described above, Staats teaches determining the number of packets per frame on a frame by frame basis using a calculated delta value. Further, Staats simply does not teach evenly distributing the x number of first data blocks among the y number of second data blocks. Staats also does not teach forming a repeating pattern of the first data blocks and the second data blocks within the data stream.

To support the rejections of the pending claims, an attempt has been made to extend the teachings of Staats beyond what those actual teachings will support. The calculations, included within the Examiner's Answer, used to support the rejections based on Staats, actually misapply the teachings of Staats. The teachings of Staats simply cannot be extended to support rejections of claims which include the limitations of the pending claims. Accordingly, it is respectfully submitted that Claims 1, 2, 4-8 and 10-32 are allowable over the teachings of Staats. Therefore, a favorable indication is respectfully requested.

Respectfully submitted,
HAVERSTOCK & OWENS LLP

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By: _____
Jonathan O. Owens
Reg. No. 37,902
Attorneys for Applicants